

Amendment to Claims

1           1. (Original). A method of combining data to arrive at a composite graphical  
2 representation of a construction site comprising, the steps of:  
3                   providing subsurface mapping data;  
4                   creating a subsurface model of subsurface features from the subsurface mapping  
5 data;  
6                   creating a wire frame model of an above surface feature;  
7                   overlaying the wire frame model with a pictorial representation of the above  
8 surface feature; and  
9                   combining the wire frame model with the subsurface model to produce the  
10 composite graphical representation.

1           2. (Original). The method of claim 1 wherein the subsurface mapping data is  
2 resistivity data.

1           3. (Original). The method of claim 2 wherein the resistivity data is taken from an  
2 AGI SuperSting program.

1           4. (Original). The method of claim 2 further comprising the step of removing a  
2 statistical outlier from the resistivity data.

1           5. (Original). The method of claim 4 wherein a word processing program is used to  
2 remove the outlier.

1           6. (Original). The method of claim 5 wherein the word processing program is  
2 WORDPAD.

1           7. (Original). The method of claim 2 further comprising the step of performing a  
2 least squares data inversion analysis on the resistivity data.

1           8. (Original). The method of claim 7 wherein the least squares data inversion  
2 analysis is preformed by a RES3DINV program.

1           9. (Original). The method of claim 7 wherein the least squares data inversion  
2 analysis is performed by a RES2DINV program.

1           10. (Original). The method of claim 2 further comprising the step of performing a  
2 kriging analysis on the resistivity data.

1           11. (Original). The method of claim 10 wherein the analysis is preformed by  
2 SURFER software.

1           12. (Original). The method of claim 2 further comprising the step of performing a  
2 cokriging analysis on the resistivity data.

1           13. (Original). The method of claim 1 wherein the subsurface mapping data is ground  
2       penetrating radar data.

1           14. (Original). The method of claim 13 wherein the ground penetrating radar data is  
2       acquired through a SIR-3000 ground penetrating radar system.

1           15. (Original). The method of claim 13 wherein the data is enhanced.

1           16. (Original). The method of claim 15 wherein the program Radan is used to  
2       enhance the data.

1           17. (Original). The method of claim 1 wherein the subsurface mapping data is  
2       seismic data.

1           18. (Original). The method of claim 17 wherein the seismic data is acquired from a  
2       SmartSeis seismic imaging system.

1           19. (Original). The method of claim 17 wherein the data is enhanced.

1           20. (Original). The method of claim 19 wherein the program SizeImager is used to  
2       enhance the data.

1           21. (Original). The method of claim 1 wherein the wire frame model is created using  
2       AUTOCAD software.

1           22. (Original). The method of claim 1 wherein the wire frame model includes  
2    a model of vegetation.

1           23. (Original). The method of claim 1 wherein the wire frame model includes  
2    a model of a building.

1           24. (Original). The method of claim 1 wherein the pictorial representation is  
2    an aerial photograph.

1           25. (Original). The method of claim 24 wherein the aerial photograph is  
2    imported into EVS software.

1           26. (Original). The method of claim 1 wherein the subsurface model  
2    comprises at least one 2-dimensional graph.

1           27. (Original). The method of claim 1 wherein the subsurface model  
2    comprises at least one 3-dimensional graph.

1           28. (Original). The method of claim 1 wherein the composite graphical  
2    representation is produced in Visual Reduction Modeling Language.

1           29. (Original). The method of claim 28 wherein the graphical representation  
2    is viewed as a web page.

1           30. (Original). The method of claim 1 comprising the further step of  
2    displaying the composite graphical representation.

1           31. (Original). The method of claim 1 wherein the composite graphical  
2    representation can be rotated.

1           32. (Original). The method of claim 1 wherein the pictorial representation is a  
2    representation of texture.

1           33. (Original). The method of claim 1 including the additional step of  
2    viewing a 2-dimensional slice of the composite graphical representation.

1           34. (Original). The method of claim 1 wherein the graphical representation is  
2    used in a .AVI file.

1           35. (Original). The method of claim 1 wherein the wire frame model includes  
2    below surface ground structures.

1           36. (Original). A 3-dimensional model of a construction site comprising:  
2                   a graphical model of subsurface mapping data;  
3                   a spatial model of an above ground object; and  
4                   a 2-dimensional image of the above ground object superimposed on the  
5    spatial model and spatially synchronized with the graphical model of resistivity data.

1           37. (Original). The 3-dimensional model of claim 36 wherein the graphical  
2       model is prepared using kriging.

1           38. (Original). The 3-dimensional model of claim 36 wherein the spatial  
2       model is prepared using AUTOCAD.

1           39. (Original). The 3-dimensional model of claim 36 wherein the 3-  
2       dimensional model is rendered in Visual Reduction Modeling Language.

1           40. (Original). The 3-dimensional model of claim 36 wherein the subsurface  
2       mapping data is resistivity data.

1           41. (Original). The 3-dimensional model of claim 40 wherein the resistivity  
2       data includes data related to moisture content.

1           42. (Original). The 3-dimensional model of claim 40 wherein the resistivity  
2       data includes data related to a void.

1           43. (Original). The 3-dimensional model of claim 40 wherein the resistivity  
2       data includes data related to a subsurface anomaly.

1           44. (Original). The 3-dimensional model of claim 40 wherein the resistivity  
2       data is derived through use of the equation:

3                   R= (V/I)K;  
4                   where K is an electrode geometric constant;  
5                   R is resistance;  
6                   V is voltage; and  
7                   I is current.

1                  45. (Original). The 3-dimensional model of claim 36 wherein the subsurface  
2                  mapping data is ground penetrating radar data.

1                  46. (Original). The 3-dimensional model of claim 36 wherein the subsurface  
2                  mapping data is seismic data.

1                  47. (Original). A method of creating a graphical model comprising the steps  
2                  of:  
3                   testing to determine subsurface mapping data;  
4                   enhancing the data;  
5                   constructing a wire frame model of an above ground structure;  
6                   providing a pictorial representation of a plan view of the above ground  
7                  structure;  
8                   combining the pictorial representation with the wire frame model;  
9                   aligning the subsurface mapping data with the combined pictorial  
10                  representation and wire frame model; and

11 merging the subsurface mapping data with the combined pictorial  
12 representation and wire frame model.

1                   48. (Original). The method of claim 47 wherein the subsurface mapping data  
2                   is resistivity data.

1           49. (Original). The method of claim 48 wherein the data is enhanced by  
2 performing a least squares data inversion analysis on the subsurface mapping data.

1           50. (Original). The method of claim 48 wherein the data is enhanced by  
2 performing a kriging analysis on the subsurface mapping data.

1               51. (Presently Amended). The method of claim 50 47 wherein the step of  
2 testing includes choosing a placement for electrodes.

1               52. (Presently Amended). The method of claim 50 51 wherein the placement  
2               is the Wenner arrangement.

1               53.     (Original). The method of claim 51 wherein the placement is the  
2     Schlumberger arrangement.

1 54. (Original). The method of claim 51 wherein the placement is the dipole  
2 dipole arrangement.

1           55. (Original). The method of claim 47 wherein the step of combining is  
2   carried out with AUTOCAD software.

1           56. (Original). The method of claim 47 wherein the step of merging is carried  
2   out with EVS software.

1           57. (Original). The method of claim 47 wherein the step of merging results in  
2   a VRML file.

1           58. (Original). The method of claim 47 further comprising the step of visually  
2   displaying the merged subsurface mapping data, combined pictorial representation and  
3   wire frame model.

1           59. (Original). The method of claim 58 wherein the pictorial representation  
2   can be rotated.

1           60. (Original). The method of claim 47 wherein the step of merging results in  
2   an HTML file.

1           61. (Original). The method of claim 47 wherein the subsurface mapping data  
2   is ground penetrating radar data.

1           62.     (Original). The method of claim 61 wherein the program Radan is used to  
2     enhance the data.

1           63.     (Original). The method of claim 47 wherein the subsurface mapping data  
2     is seismic data.

1           64.     (Presently Amended). The method of claim 61 or 63 wherein the program  
2     SizeImager is used to enhance the data.

1           65.     (Original). The method of claim 48 wherein the wire frame model  
2     includes below ground structures.